

WHAT IS CLAIMED IS:

1. A retaining ring for a chemical mechanical polishing apparatus for semiconductor wafers, comprising:

a retaining ring of integral design made of a plastic material, wherein the retaining ring forms on a first front side thereof a bearing surface for supporting the retaining ring on a polishing surface of the polishing apparatus, and includes on the side thereof lying opposite the first front side thereof in axial direction fitting elements for fitting the retaining ring on the polishing apparatus.

2. The retaining ring according to claim 1, wherein the retaining ring comprises at least two layers or components.

3. The retaining ring according to claim 1, wherein the plastic material comprises at least one of a thermoplastic material, a thermosetting plastic material, and an elastomer.

4. The retaining ring according to claim 1, wherein the plastic material is a reinforced plastic material.

5. The retaining ring according to claim 4, wherein the plastic material is a fiber-reinforced plastic material.

6. The retaining ring according to claim 4, wherein the plastic material has a lower content of reinforcement substances adjacent to its first front side than on its side including the fitting elements.

7. The retaining ring according to claim 1, wherein abrasion-reducing and/or wear-reducing additives are admixed with the plastic material.

8. The retaining ring according to claim 1, wherein the retaining ring comprises a metal ring embedded in the plastic material and arranged concentrically in the retaining ring.

9. The retaining ring according to claim 8, wherein the fitting elements are held on the metal ring.

10. The retaining ring according to claim 8, wherein the metal ring is completely encased by the plastic material.

11. The retaining ring according to claim 8, wherein the metal ring is a sheet metal ring.

12. The retaining ring according to claim 11, wherein the sheet metal ring is a perforated sheet metal ring.

13. The retaining ring according to claim 11, wherein the sheet metal ring has a substantially cylindrical shape.

14. The retaining ring according to claim 12, wherein the sheet metal ring has the shape of an annular disk.

15. The retaining ring according to claim 2, wherein the plastic material comprises at least one of a thermoplastic material, a thermosetting plastic material, and an elastomer.

16. The retaining ring according to claim 2, wherein the plastic material is a reinforced plastic material.

17. The retaining ring according to claim 16, wherein the plastic material is a fiber-reinforced plastic material.

18. The retaining ring according to claim 17, wherein the plastic material has a lower content of reinforcement substances adjacent to its first front side than on its side including the fitting elements.

19. The retaining ring according to claim 3, wherein the plastic material is a reinforced plastic material.

20. The retaining ring according to claim 19, wherein the plastic material is a fiber-reinforced plastic material.